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Lanka Education and Research Network

***Virtualization and Installation of On-Prem Video Conferencing Platform***

# Linux Containers

# INTRODUCTION TO LXC

- LXC - Linux Containers.
- LXC command is a client interface for the Linux kernel containment features.
- LXD is the lightweight container hypervisor.
- Through a powerful API and simple tools, it lets Linux users easily create and manage containers.
- The goal of LXC is to create an environment as close as possible to a standard Linux installation but without the need for a separate operating system.

# LXC FEATURES

- LXC can be used in two distinct ways.
  - Privileged - by running the lxc commands as the root user.
  - Unprivileged - by running the lxc commands as a non-root user.
- Templates

-Creating a container generally involves creating a root filesystem for the container. lxc-create delegates this work to templates, which are generally per-distribution.

- Autostart

- LXC supports marking containers to be started at system boot

- Apparmor

-LXC ships with a default Apparmor profile - to protect from accidental misuses of privileges.

# CONT'D

• Snapshot /Cloning

- For rapid provisioning, you may wish to customize a container according to your needs and then make multiple copies of it.

- This can be done with the lxc-clone program.

- Clones are either snapshots or copies of another container.

- To more easily support the use of snapshot clones for iterative container development, LXC supports snapshots.

- When working on a container C1, before making a potentially dangerous or hard to-revert change, you can create a snapshot

# LXC COMPONENTS

- The liblxc library
- Several language bindings for the API:
  - python3
  - Lua
  - Go
  - Ruby
  - Haskell
- A set of standard tools to control the containers
- Distribution container templates

# LXC COMMANDS

```
#Before running lxc for the first time, have to initiate it.

lxd init

#Check remote repositories

lxc remote list

#Check local repositories

lxc image list

#Check remote images.

lxc image list images:
lxc image list images:ubuntu

#Create a Ubuntu Container.

lxc launch ubuntu:22.04 test-ct
```

# CONT'D

```
#List LXC

lxc list

#Login to container

lxc exec test-ct bash

#Delete a container

lxc stop test-ct
lxc delete --force test-ct

#Make a snapshot

lxc snapshot test-ct test-ct1
```

# THANK YOU